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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,438	06/01/2005	Ulrich Muller	05-0437	1391
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ROBERT W. BECKER & ASSOCIATES			EXAMINER	
707 HIGHWAY 333			KERNs, KEVIN P	
SUITE B			ART UNIT	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/533,438	<b>Applicant(s)</b> MULLER, ULRICH
	<b>Examiner</b> Kevin P. Kerns	<b>Art Unit</b> 1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 12 September 2008.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 15-20 and 24-32 is/are pending in the application.  
 4a) Of the above claim(s) 28-32 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 15-20 and 24-27 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 29 April 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. This application contains claims 28-32 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15-20 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson (US 3,437,783) in view of Guerin et al. (US 6,410,878).

Lemelson discloses a method of making a metallic composite matte (porous and plate-shaped) structure (best shown in Figures 1-4), in which the method includes the steps of providing metallic fibers in the form of prefabricated metallic fiber mats (filaments 25) that are derived from bulk material and are initially separated, with the opposite sides of the metallic composite being fused with cover layers in the form of wire meshes; and compressing and fusing the metallic fibers 25 together in a single process step, in which the fusing is performed in the presence of an inert gas by resistance welding via pressurizing (surface-shaped) electrodes (11,22) on opposite

sides of the metallic composite, in order to heat the material by electrical resistance and thereby obtain point-type fusing of the metallic fibers 25 with respective closest metallic fiber(s) at the compressing and fusing location (column 1, lines 14-26 and 40-72; column 2, lines 1-4 and 35-72; column 3, lines 1-75; column 4, lines 1-14; and Figures 1-4). Lemelson does not specifically disclose the use of capacitor pulse fusing at a current pulse of up to 200,000 A for less than 1 second, and pressure bonding of between 0.1-10 N/mm<sup>2</sup>.

However, Guerin et al. disclose a method of producing a flame support made of metal fibers, in which the method (as carried out in the apparatus of Figure 5) includes the steps of compressing the fibers 10 to form an agglomerated mat; connecting the mat to electrodes and a capacitor 120 (capacitor pulse fusing – abstract; column 2, lines 57-67; and column 5, lines 39-54) to bring the fibers into contact; and welding the metallic fibers to an intensity of higher than 10,000 A during a time period of 10-20 microseconds (column 3, lines 1-6), with the pressure bonding of the pulse fusing process being optimized between 0.1-10 N/mm<sup>2</sup> (as one of ordinary skill in the art would have recognized that optimization of ranges would involve routine experimentation), in order to produce fibers that are closely welded together under high voltage to produce a substantially uniform porosity product with improved mechanical strength (abstract; column 2, lines 52-67; column 3, lines 1-6; column 5, lines 39-67; column 6, lines 1-8; and Figures 4 and 5). Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed ranges through process optimization, since it has been held that when there are general conditions of a

claim disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the method of making a metallic composite matte (porous and plate-shaped) structure, as disclosed by Lemelson, by using the capacitor pulse fusing at a current pulse of up to 200,000 A for less than 1 second, as taught by Guerin et al., in order to produce fibers that are closely welded together under high voltage to produce a substantially uniform porosity product with improved mechanical strength (Guerin et al.; abstract; and column 5, lines 55-60).

***Response to Arguments***

4. The examiner acknowledges the applicant's amendment received by the USPTO on September 12, 2008. The amendment overcomes prior objections to the specification. Claims 28-32 remain withdrawn from consideration (also see above section 1 regarding guidelines for a complete reply to the final rejection). Claims 15-20 and 24-27 remain under consideration in the application.

5. Applicant's arguments filed September 12, 2008 have been fully considered but they are not persuasive.

With regard to the applicant's remarks/arguments on pages 3-8 of the amendment, the applicant provides arguments that the combination of Lemelson and Guerin et al. allegedly does not render obvious the subject matter of the pending claims.

The examiner respectfully disagrees, as Lemelson disclose a method of making a metallic composite matte structure (being porous and plate-shaped), in which filaments/fibers are compressed and welded simultaneously. Although Lemelson does not disclose that the method of welding is via capacitor pulse fusing (welding) at specified welding current and time parameters, Guerin et al. disclose such a method, while at least suggesting the welding parameters (for details, see the 35 USC 103(a) rejections in above section 3). Throughout pages 3 and 4 of the remarks/arguments section, the applicant generally discusses advantages of the applicant's invention, while also providing a description of the teachings of Lemelson and Guerin et al. However, on page 5, the applicant refers to the Lemelson reference as being "*conventional welding*" that is "*suited to create arrays of welded filaments*", followed by the statement that "*Lemelson's method is not suited for providing a continuous production of metallic composites*" that are "*not homogenous*". The examiner respectfully disagrees with these statements, since they have no support on their own and are absent from Lemelson's disclosure. In fact, Lemelson discloses (in column 1, lines 14-16, as cited by the applicant) the "*new and improved matte structures and composite structures which include arrays of welded filaments*", and the applicant states that these composite structures are "*not homogeneous*" – without any support to make this statement. Importantly, there are no limitations in independent claim 15 to validate that the applicant's composite structure is "*homogeneous*". In the arguments throughout page 6 of the remarks/arguments section, the applicant argues that there is no motivation to use the process of Lemelson (which is substantially similar to the applicant's process

that would result in a similar composite matte structure to that of Lemelson) in combination with capacitor pulse welding. However (and as also stated by the applicant in the 1<sup>st</sup> full paragraph on page 6 of the remarks/arguments section), Guerin et al. teach using a pulse electro-weld in order to form a matte of metallic fibers that are welded together. Contrary to the applicant's statement on page 6, these teachings are not "contradictory" to those of Lemelson, who already sets forth the simultaneous steps of compressing and welding, and the teachings of Guerin et al. also require compressing and welding at the same time (see Figure 5, which shows electrodes 119a,119b contacting/compressing the mat 115 therebetween, in which the values of pressure (N/mm<sup>2</sup>) would have been obvious in view of routine process optimization). From the middle of page 6 to end of the arguments (top of page 8) in the remarks/arguments section, the applicant argues that the values of welding current and time period for pulse welding is allegedly not disclosed/suggested by Guerin et al. (with reference to Guerin et al.; column 3, lines 1-6). On page 7, the applicant conducts a calculation from Guerin et al.'s method that leads to a very high amount of energy that would result. The examiner respectfully disagrees, as Guerin et al.'s values to those set forth in applicant's independent claim 15 overlap, and additionally would have been obvious in view of process optimization (see above section 3), as Guerin et al. disclose "higher than 10,000 A", which is within the claimed range of "up to 200,000 A" (and "up to" would include very low values such as minimal fractions of 200,000 A, such as a few or tens of amperes). In addition, Guerin et al. disclose "10-20 microseconds", which is inclusive of the claimed "less than 1 s" (of independent claim 15) and the claimed "less

than 10 ms" (of claim 24). Contrary to the applicant's statements and calculations throughout pages 6-8 of the remarks/arguments section, the teachings of Guerin et al. include the welding current pulse and time period of pulse application during welding, with such optimization of these welding parameters being obvious to one of ordinary skill in the art, since it has been held that when there are general conditions of a claim disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980). Also see MPEP 2144.05. In view of the above discussion, the combination of Lemelson and Guerin et al. establish a *prima facie* case of obviousness under 35 USC 103(a), and claims 15-20 and 24-27 remain rejected.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin P. Kerns whose telephone number is (571)272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on (571) 272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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November 21, 2008